

Serial No. 10/001,218  
Atty. Docket No. 49950-59824CON4

**Listing of Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A eukaryotiegram-positive bacterial host cell selected from the group consisting of *Bacillus subtilis* and *Bacillus polymyxa* which has been transformed with (a) heterologous *Zymomonas mobilis* genes encoding alcohol dehydrogenase and pyruvate decarboxylase wherein said genes are expressed at sufficient levels to confer upon said cell transformant the ability to produce ethanol as a fermentation product, and (b) a heterologous DNA segment encoding a protein involved in transport of mono- and oligosaccharides into the host cell.

Claims 2-5 (Canceled)

6. (Original) The cell according to claim 1, wherein said cell is further transformed with a gene encoding an enzyme which degrades oligosaccharides.

7. (Original) The cell according to claim 6, wherein said enzyme which degrades oligosaccharides is a polysaccharase.

8. (Original) The cell according to claim 7, wherein said polysaccharase is selected from the group consisting of cellulolytic, xylanolytic, and starch-degrading enzymes.

9. (Original) The cell according to claim 1, wherein said heterologous genes are incorporated onto the chromosome of said cell.

10. (Presently Amended) A method for the production of ethanol, said method comprising transforming a eukaryotiegram-positive bacterial host cell selected from the group consisting of *Bacillus subtilis* and *Bacillus polymyxa* with (a) heterologous *Zymomonas mobilis* genes encoding alcohol dehydrogenase and pyruvate decarboxylase wherein said genes are expressed at sufficient levels to result in the production of ethanol as a fermentation product, and (b) a

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heterologous DNA segment encoding a protein involved in transport of mono- and oligosaccharides into the host cell.

Claims 11-14 (Canceled)

15. (Original) The method, according to claim 10, wherein said cell is further transformed with a gene encoding an enzyme which degrades oligosaccharides.

16. (Original) The method, according to claim 15, wherein said enzyme which degrades oligosaccharides is a polysaccharase.

17. (Presently Amended) A method for reducing the accumulation of acidic metabolic products in the growth medium of a eukaryotic gram-positive bacterial host cell selected from the group consisting of *Bacillus subtilis* and *Bacillus polymyxa*, said method comprising transforming said cell with (a) heterologous *Zymomonas mobilis* genes encoding alcohol dehydrogenase and pyruvate decarboxylase wherein said genes are expressed at sufficient levels to result in the production of ethanol as a fermentation product, and (b) a heterologous DNA segment encoding a protein involved in transport of mono- and oligosaccharides into the host cell.

18. (Canceled)

19. (New) The method according to claim 17, further comprising transforming the cell with a gene encoding an enzyme which degrades oligosaccharides.

20. (New) The method according to claim 19, wherein said enzyme which degrades oligosaccharides is a polysaccharase.

21. (New) The method according to claim 20, wherein said polysaccharase is selected from the group consisting of cellulolytic, xylanolytic, and starch-degrading enzymes.

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22. (New) The method according to claim 17, wherein said heterologous genes are incorporated onto the chromosome of said cell.